

30  
PRACTICAL OBSERVATIONS

ON

# DIPHTHERIA AND ERYSIPELAS.

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## INTRODUCTION.

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THE substance of the following observations on diphtheria was published in the 'London Medical Review,' in the commencement of 1861, and they were reprinted soon after, by Messrs. Condry and Co., for more general circulation. I should, therefore, have remained satisfied with the amount of publicity they had thus probably attained, but on perusing the paper on the same subject read by my friend Dr. Begbie to the Medico-Chirurgical Society of Edinburgh, on the 9th of April, 1862, and the discussion it gave rise to on the occasion, I felt that my views and mode of treating the disease had not received the general attention they appear to me to merit.

I have, therefore, resolved to republish the observations, along with some additional remarks suggested by my increased experience in the treatment of diphtheria, and by fuller consideration of the subject. I feel encouraged in carrying this resolution into effect from observing that my views in regard to the nature of the disease are supported by Dr. Begbie in his paper just referred to, and by Dr. Handyside in his remarks thereon at the meeting of the society, while my treatment appears to have been adopted by both of these eminent practitioners.

It was for the purpose of making this treatment more widely known that I wrote my paper; and as I have now employed it with invariable success in at least thirty cases of diphtheria, some of which were very severe, I can unhesitatingly recommend it to the notice of the profession in general.

Dr. Begbie, in his interesting narrative, gives a melancholy picture of the virulence of diphtheria in Edinburgh,

where even under his treatment it proved fatal in eleven cases out of twenty, thus showing a mortality nearly equal to that of cholera; and, at the same time, indicating how urgently some remedy or mode of treatment was required, which, by the blessing of Providence, might diminish the fatal tendency of the disease. It is true that Dr. Begbie remarks that "this large proportion of deaths, however, must not be considered as indicating the average mortality from the disease. The number of the whole is too small to enable us to draw any accurate conclusion; while it must be kept in mind that my attendance in almost all cases was requested only on account of their more than usual severity." This may be perfectly correct; but I feel well assured that, had the treatment I have recommended been used from the commencement in all the cases he has reported, he would have been enabled, in all human probability, to have given a more favorable account of his experience. This opinion seems to me to be justified by the result of the cases in which he employed the treatment.

In the first edition of this paper I did not think it necessary to report all the cases of diphtheria which had come under my notice, as my object was merely to publish a new mode of treating the disease; I therefore referred only to those cases in which the whole treatment had been used. Had I not limited myself to such cases, I would have mentioned others in which I had employed the muriated tincture of iron with remarkable advantage. The first of these occurred in the case of a cook in the service of a family residing in Edinburgh, who came under my care about twelve years ago. This patient was apparently in imminent danger, as her general health was much impaired, and her throat covered with a very dark deposit; but immediately she was put under the chalybeate she began to improve, and rapidly got well.

The next case was that of a young lady of a naturally delicate constitution, who came from England to spend the winter in Edinburgh. I was requested to see her on the 13th November, when she seemed to be suffering from a common cold, which did not confine her to bed. She had running at the nose and sore throat, which I touched with caustic.

On the 14th her throat was more swelled and painful. Caustic was again applied, and I ordered her to have a draught at bedtime containing the spirit of Mindererus and antimonial wine.

15th.—Her throat had assumed a malignant character, the mouth and tonsils being covered with a deep brown-coloured, sloughy deposit. Caustic again applied, and to use a gargle of diluted sulphuric acid and infusion of roses. To take twenty-five drops of the muriated tincture of iron every two hours, in a wineglassful of water, and to have two glasses of port wine in the course of the day, in divided doses.

16th.—Her throat almost as black as ink, which I was disposed to attribute to the chalybeate, although I have not observed it to produce the same effect in other cases. Dr. Begbie saw her to-day, and approved of the internal treatment being continued; but suggested a gargle of Aqua Chlorinii and water, which the young lady, being of a fanciful disposition, would not use. The false membrane sloughed off, however, towards evening, and the pulse, which was 108 in the morning, fell to 84.

On the 17th the throat was clean, and the pulse 80.

On the 18th the mouth was again covered with a brown deposit; pulse 72. Had some inclination for food, and ate a mutton-chop.

On the 19th passed a good night, but in other respects the same as yesterday. To continue the chalybeate and wine, and to use a gargle of borax and water. This young lady made a good recovery; and thinking, as she had caught the disease in Edinburgh, that it might recur, she soon returned to Cheltenham. Dr. Begbie has apparently overlooked this case, which is the more remarkable, as, according to his statement, it must have been the first he had seen for upwards of a quarter of a century, and it had the peculiarity of being treated very differently from any he had previously met with. I have referred to this case more particularly, not only from its having been successfully treated by the muriated tincture of iron, but from the appearance of the false membrane in the commencement having resembled very much what occurred in another delicate young lady whom I attended with Dr. James Duncan. In this case the uvula and great part of the soft palate were entirely corroded away, leaving the posterior nares quite exposed, and producing all the effect in the voice of a congenital cleft palate. This is a rare result in diphtheria, as the sloughing of the false membrane is generally unattended by any deep corrosion of the surface.

Long before my attention was particularly directed to the peculiar and valuable properties of the muriated tincture

of iron in the treatment of erysipelas, I attended a case of diphtheria which I am induced to relate here, as it affords an excellent example of what may properly be called the erysipelatous or asthenic form of the disease, which generally appears in a very debilitated state of the system and in old persons, and is not attended with swelling of the tonsils or the superficial glands of the neck; on the contrary, the fauces are in a state of relaxation, and the false membrane appears in patches on them. This case has the additional interest of having been treated under the superintendence of Dr. Abercrombie, and illustrates the treatment which that celebrated physician approved of in a dangerous case of diphtheria.

Mr. R—, a respectable cabinet-maker, residing in Cumberland Street, Edinburgh, who had recently recovered from a severe attack of rheumatic fever, sent for me on the 6th January, 1841, in consequence of his having, as he supposed, caught cold. He complained much of his throat, which had an aphthous appearance; his tongue was much furred; pulse 84, feeble, and he felt very weak.

℞ Mist. Camphoræ, ʒiij;  
 Liq. Ammoniaë Acetatis, ʒiss.  
 M. ft. mistura.

Sig. *A soothing mixture.* A table-spoonful to be taken every four hours.

℞ Acidi Sulph. diluti, ʒj;  
 Infus. Rosæ, ʒviij.  
 M. ft. gargarisma.

Sig. *A gargle;* to be used frequently.

January 7th.—Throat less painful, but still covered with a grayish slough. No swelling of the tonsils or uvula; suffers from a sense of weakness. To continue the camphor mixture, and to use a gargle of cayenne pepper and vinegar instead of the acid gargle.

8th.—The throat looks worse, and the false membrane extends all over the fauces and palate, which has a grayish appearance generally, with spots of a darker colour in different parts; has spit up a quantity of false membrane since yesterday; tongue black and slimy; pulse 84, very feeble, and he still complains of great weakness. To have an ounce



of port wine every hour, and a wineglassful of the following mixture every three hours :

℞ Sulph. Quininæ, gt. xij;  
 Acidi Sulph. dil., gt. xij;  
 Aquæ Fontanæ, ℥xij.  
 M. ft. mistura.

To use the acid gargle.

9th.—Pulse more feeble; but his other symptoms much the same as yesterday. Bowels moved with castor oil. Dr. Abercrombie saw him for the first time, but suggested no change in the medicine. The wine to be taken only every hour and a half.

10th.—Has spit up a quantity of false membrane; pulse 100, stronger in the morning, but fell to 84 in the evening, and was full and soft; has got a troublesome cough, and a good deal of hiccough. To continue the medicine, and, if the wine produce acidity, to substitute a teaspoonful of brandy for it.

11th.—Was much the same in the morning as he was yesterday, his throat being still covered with false membrane, and his cough very troublesome. Dr. Abercrombie saw him, and ordered a teaspoonful of the following mixture to be taken occasionally, saying that he had found it beneficial in similar cases :

℞ Syrupi simplicis ℥j;  
 Acidi Nitrici diluti, gt. lxxx.

In the morning he felt stronger, although his cough gave him great annoyance. The acid mixture seemed to be useful, as the slough was more circumscribed, and it was beginning to separate in some parts, leaving the surface clean. Tongue cleansing towards the point. His voice has improved, and the expression of his face is less anxious; pulse 84, full and soft; bowels moved by castor oil, and a quantity of dark matter evacuated. As he did not relish the brandy, to return to the wine. The acid mixture to be continued, as Dr. Abercrombie thought it would preclude the use of gargling.

12th.—The sloughing appearance of the throat much diminished, leaving the palate of a bright-red colour. Tongue clean; pulse 84, of natural strength. Bowels moved once. Feels stronger, but is still much annoyed with his cough, which, however, is unaccompanied with expectoration. He now feels that the nitric-acid mixture smarts him severely.

To continue the medicine.

13th.—Not so well, the false membrane again extending from one side to the other of the palate. Bowels moved three times after taking a dessert-spoonful of castor oil. Pulse much the same as it was yesterday. Dr. Abercrombie saw him, and recommended a continuance of the treatment.

14th.—Improving, the false membrane being confined to each side of the palate, leaving uvula free. Pulse 84, full and soft. Had some inclination for food, and asked for broth. To continue the medicine, along with either wine or brandy.

15th.—Gradually improving. The false membrane now occupies only one side of the throat, the rest of the fauces and palate being of a bright-red colour. Pulse 84, of natural strength, but he still complains of great weakness. Bowels moved by castor oil.

To continue the treatment.

16th.—Evidently stronger, although his throat is not quite so well, the uvula being covered with a white film, as if the false membrane was going to form again. Dr. Abercrombie saw him, and thought he was doing so well that he took his leave of him.

To continue the treatment.

17th.—Much improved, the false membrane having quite disappeared, leaving the whole throat of a uniform bright-red appearance.

To discontinue the nitric-acid mixture, and to use the sulphuric-acid gargle. To continue the tonic and wine.

19th.—Apparently convalescent, although he has some difficulty in swallowing.

26th.—Rapidly gaining strength.

I was induced to employ the muriated tincture of iron in diphtheria by observing its remarkable effects in erysipelas, and being convinced that there is great similarity between the two diseases in many respects, which is evinced by their both being fostered, if not produced by a cachetic state of the system, arising from exposure to an impure atmosphere, and by their being cured by the same mode of treatment. I am induced to add, as a supplement to my observations on diphtheria, the substance of the paper I read to the Medico-Chirurgical Society of Edinburgh, in which were first published the treatment of idiopathic erysipelas by the muriated tincture of iron, suggested by my brother, the late George Hamilton Bell, and my own experience of its effects in infantile and in sympathetic erysipelas, or that form of dis-



ease which is consequent on external injury. I have the greater satisfaction in again bringing this paper forward, because, while it enables me to lay before the profession my own observations in regard to the treatment of two of the most serious forms of the disease, it was the medium through which my brother's valuable suggestions were made more widely known, and the merit of them secured to him; for had it not been for my paper, it is more than probable they never would have been published.

In republishing this paper I shall leave it in the form in which it appeared in the 'Edinburgh Medical and Surgical Journal,' for although it is not quite according to the arrangement in which it was when I read it to the society, it properly gives the precedence to my brother's remarks to which they are entitled. In regard to the second part of the paper, I have been induced to extend it, by adding a few cases of idiopathic erysipelas which appear to me to have much interest.

WELLINGTON HOUSE, TUNBRIDGE WELLS;  
20th May, 1864.

## DIPHThERIA.

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THERE are few diseases more alarming to the community in general, or more dreaded by the medical profession, than diphtheria, in consequence of its insidious and virulent character, and its frequently terminating fatally without giving the slightest warning of so melancholy a result; while even the mildest forms of the disease are liable to be followed by paralysis, and other neuralgic affections. Although these affections are much less common in this country than M. Maingault leads us to believe they are on the Continent, they are not on that account the less worthy of earnest attention, being always the source of great distress to the patient and much anxiety to his friends. We should, therefore, not only endeavour to ward them off by every means in our power, but we should also make the friends aware that such symptoms may occur, because they do not in general appear until the convalescence of the patient is seemingly established, and he has probably been sent to the country. Were an inexperienced practitioner, or one unacquainted with the previous history of the case, called in under such circumstances, he might mistake the disease for one of a more permanent and serious character, depending on some lesion of the brain or spinal cord, and by adopting improper remedies lead to fatal results; or, as happened to a patient of mine some time ago, he may be ordered to the antipodes in search of health and strength, which, by patience and judicious treatment, may more certainly be obtained at home. This patient fortunately came again under my care before leaving this country, and he ultimately completely regained the use of his limbs, without being put to the expense and annoyance of a tedious voyage.

Although much attention has been directed to the subject of diphtheria in consequence of its having appeared as an

epidemic in England a few years ago, and more recently in the sporadic form in several places in Scotland, it is an error to suppose, as has been generally the case, that it is a new disease. It has long been known to the profession, and is well described by many of our medical authors, among the earliest of whom, in England, according to Dr. Osmerod\*—who gives an interesting account of diphtheria as it appeared in Brighton—was Dr. Fothergill,† who treats of it under the head of sore throat with ulcers. In Scotland it was noticed by Dr. Cheyne,‡ Dr. Mackenzie,§ Dr. Thomas Brown,|| of Glasgow, Dr. Hamilton,¶ and Dr. Abercrombie,\*\* who, with his usual acuteness and observation, gives an excellent description of the disease as it prevailed in Edinburgh in 1826. He considered it “as being primarily an affection of the mucous membrane of the fauces and œsophagus, which may go no further, or may extend, in the one case to the stomach, in another to the larynx;” and “it is distinguished from the cynanche maligna and the sore throat of scarlatina by the absence of ulceration.” This, however, is not entirely correct, as I have observed that ulceration does exist in some instances.

It is remarkable that, while the primary symptoms of the disease have been clearly described, the secondary symptoms, or the neuralgic and paralytic affections, have been altogether overlooked by our authors; and even on the Continent they did not receive the attention their importance requires until they were brought prominently before the profession by M. Maingault, in his admirable treatise, ‘*De la Paralysie Diphtherique.*’ They are not referred to at all by M. Briton-neau in his elaborate work, ‘*Des Inflammations de Tissu Muqueuse.*’ This circumstance may be accounted for by the fact already alluded to, namely, that these symptoms have been attributed to some other cause, or that they may not have been so common in the epidemics he describes. Like the secondary symptoms of syphilis, they form a distinct series of phenomena, which do not in general appear until the primary affections of the throat have been overcome. It

\* ‘Lancet,’ 7th Dec., 1861.

† Tract, published in London in 1748.

‡ ‘Pathology of the Membrane of the Larynx and Bronchia,’ p. 35. Published 1809.

§ ‘Edinburgh Medical and Surgical Journal,’ vol. xxiii, p. 296.

|| Vide a paper read before the Medical Society of Glasgow, May, 1820.

¶ ‘Edinburgh Journal of Medical Science,’ Oct., 1826.

\*\* ‘Pathological and Practical Researches on Diseases of Stomach,’ p. 50.

is important, therefore, when we are consulted in regard to the paralysis which sometimes occurs in early life and in young people, that we should inquire minutely into their previous history. A short time ago I observed the propriety of this in the case of a young lady, who had just returned from a German boarding school, and consulted me in regard to a complication of ailments, one of which was paralysis of the right arm. On looking at her throat I found it much relaxed, red, and flabby, and on inquiry she told me that she had had a severe attack of diphtheria a short time before leaving the Continent.

Diphtheria may occur in the sporadic, endemic, or epidemic form; and although it is most commonly met with in early life, it is not limited to any period, as I have seen it in childhood, middle age, and in advanced years, one patient having been above eighty. It affects those most frequently, however, who occupy low, damp, and ill-aired situations, and its symptoms vary according to the state of the system when infection takes place. Sporadic cases are liable to occur even among the better classes, particularly when the drains and waste-pipes in their houses are out of order; and in such circumstances it may affect several members of the same family successively, giving rise to the idea that its extension is owing to its very infectious character, when probably it arises from the patients being exposed to the same exciting cause, in which case the weak and more susceptible are apparently affected first. I am led to this conclusion from having on more than one occasion attended in diphtheria several members of families living in large and apparently well-aired houses, who became affected by the disease in succession. Two examples of this kind are particularly worthy of attention. The one family resided in a large house in the south side of Edinburgh, in which the drains, &c., appeared to be in perfect order. On inquiry, however, I ascertained that in the room off the nursery, where the children slept, and communicating with it by a door, which was frequently open, there was a bath, an open water-closet, also a sink for carrying away the slops, and that often an offensive smell came from the waste-pipe of the bath. The little girl first affected was extremely delicate; the others, on the contrary, were strong and healthy looking. The first was taken ill on the 3rd of January, the second on the 2nd of February, and the third and eldest on the 4th of May, in the same year. These cases show how very important it is to attend to the ventilation of the apartments where

children pass much of their time. It may not be uninteresting to mention here that, some years previous to the occurrence of these cases, I, along with Dr. Begbic, attended the father of this family, who died suddenly of sore throat after a few days' illness. His throat had a bright-red, erysipelatous appearance, which extended all over the fauces and palate; but there was no swelling of the parts nor deposition of false membrane. This was obviously one of the malignant forms of the disease, which occasionally occur, and are met with, according to Dr. Ormerod, at the "beginning of an outbreak of diphtheria," when "patients will sometimes die of the constitutional affection before the local changes have attained to what we might, from analogy of other cases, have deemed a fatal amount!"\* I did not arrive at this conclusion, however, until my attention was more particularly directed to the subject of diphtheria by meeting with a greater number of cases.

The other example occurred in a family occupying a large and commodious house in the south of England, in which I was requested to see, on the 26th March last, a delicate girl, about six years of age, who was suffering from sore throat, apparently the result of cold, although, as she had not been in any way exposed, it was difficult to know how she could have caught it. She had high fever, the glands of her neck were enlarged, and the tonsils were swollen and inflamed. The true character of the disease was, however, soon disclosed, by the appearance of an indented spot about the size of the point of the finger on the right tonsil, covered with thin grayish-white film. She made a good recovery. Her maid soon after became affected in the same manner; then her mamma and eldest brother; then the cook and under nursery maid, both of whom seemed to have been out of health for some time. The fever in the case of the cook ran very high, her pulse for some days being 140, and the diphtheritic deposit resisted the effect of the lotion of Condry's fluid longer than usual. The next person affected was a lady who was on a visit in the house, and when she was nearly well the youngest son was taken ill. The deep-crimson colour of the throat in all those cases was very remarkable, and made the appearance of the whitish deposit more striking. When they were all in a state of convalescence and some of the family were going from home for change of air, the butler placed himself under my care, saying that he had had for some time a sore throat, which, however, was

\* Ormerod, op. cit., p. 542.



now well; but that he was suffering from acute pain in his right nostril and a peculiar numbness on the right side of his head and face, and that his eyesight had suddenly become much impaired. His breath had a most offensive smell.

As none of those persons whose cases I have referred to were aware of having been exposed to cold or infection, I felt quite at a loss how to account for their being all similarly affected, and I began to suspect the drains must be out of order, more especially as a very offensive smell had been perceptible in the back part of the house. I therefore suggested that the drains should be examined, which was done, but they were found to be in perfect order, having been cleared out some months previously. The cause of so many individuals in one family being similarly affected seemed very mysterious, until it was found out that a field immediately behind the house had been *top-dressed*, or, in other words, had been covered with the most nauseous and offensive manure, which had been left to be absorbed or washed into the soil, when the mystery was explained.

The opinion I have expressed in regard to the exciting causes of sporadic diphtheria is strengthened still more by the following facts and cases. I was called to see a little child in Abbey Hill, Edinburgh, who, seemingly in her usual health, was allowed to amuse herself in the back green, where there was a foul drain, which had been opened for the purpose of being cleared. She was soon after laid up with sore throat, and after lingering for twelve days died, apparently from diphtheria, but the parents would not allow a post-mortem examination. I particularly inquired if she had been exposed to cold, but the mother assured me she had not; I then asked if the house was damp, or if the drains were in order, when she pointed to the open drain behind. This family soon after removed to another house, in Holyrood Terrace, and sixteen months after the occurrence of the above case I was requested to see the only son, who was about six years of age, and suffering from a severe attack of diphtheria; his throat was covered with false membrane. He was lying in the kitchen, which was a small and not particularly well-aired apartment, while, to add to its other defects, there was in the recess of the window a water-pipe and sink for carrying away the foul water. He made a good recovery. The next case occurred in a naturally strong and healthy young gentleman, who was much weakened by excessive bleeding from the socket of a wisdom tooth that he had foolishly been per-

suaded to have pulled out, although it was quite healthy; but it had given him annoyance by the gum growing over it. He complained much of his throat, and on looking at it I found it affected with erysipelatous inflammation, and there was a large patch of diphtheritic exudation on each tonsil. He informed me that he had been employed for many hours a day writing in a room in which there was a most offensive smell coming from the drains, which were out of order, and from a water-closet in the adjoining room. I also observed that his lodgings, which were situated between the water of Leith and the mill-lead coming from it, had a very bad smell, which was considerably increased on particular days by the effluvia arising from the main stream being made the receptacle of the refuse flowing from a distillery; and I was told that some time previously every member of the family with whom he lodged had been affected with diphtheria. I may mention also that a short time before I attended this gentleman I attended the gentleman in whose office he was employed, for sore throat, which was erysipelatous and relaxed, but there was no diphtheritic exudation. He was reduced, however, to a state of great weakness.

While I entertain a very decided opinion in regard to inattention to ventilation and other sanitary measures being a fertile source of diphtheria, I have no doubt that it may be propagated by infection, particularly if debilitated and susceptible individuals are much exposed to the offensive fœtor of the patient's breath. The most striking example of this I have met with on record is related by Dr. M. Barry in his interesting and instructive paper on diphtheria.\* It occurred in a girl aged eleven, apparently in good health, who was allowed to visit a companion in the infirmary, recovering from a severe attack of diphtheria. She remained with her a short time, and kissed her on leaving. Seven days after, she was admitted to the infirmary with a distinct attack of the disease. But this characteristic of the disease may be much modified, if not warded off, by proper management, even under circumstances which are apparently favorable for the extension of disease. In support of this opinion I may state that I attended, in December, 1857, a young lady who came from the country suffering from sore throat, and took up her abode in an establishment in the New Town of Edinburgh, where a number of young ladies were boarded. Her case proved to be a severe attack of sthenic diphtheria; the tonsils were much swollen and inflamed, and soon became covered

\* 'Lancet,' July 31st, 1858.

with membranous exudation. The submaxillary glands were also much enlarged, skin hot, and pulse very rapid. After an illness of three weeks she made a good recovery, which was not followed by any neuralgic affection. She slept on the same floor with seven or eight other girls during her illness, and when convalescent she was allowed to sit in the same room with them. This young lady came from Dumfriesshire, and not far from Moffat, where there was a great deal of sore throat prevailing at the time, and several of her family had suffered from scarlatina shortly before she left home. She resisted the infection of that disease, however, at the time, and as the disease had been quite away from the locality for some time, it was thought there could be no risk in allowing her to go home for the benefit of change of air before resuming her studies, but on her return again to school she was immediately laid up with scarlatina. She was at once removed from the establishment, and the disease did not extend.

Eleven months after the occurrence of the above case, an elderly lady in the same establishment was affected with diphtheria, in every respect similar in character to the case just described. I should mention, however, that she had just come from the house already referred to, in which the drains were so much out of order. She was dangerously ill for some days, but ultimately recovered without any paralytic symptoms. She occupied a room on the drawing-room floor, which was so small that it was necessary to keep the door constantly open; yet although eight or ten young ladies passed and repassed her room several times a day, none of them became infected.

In both of these cases Condry's fluid was extensively used as an application to the throat, and in purifying the rooms by sprinkling it on the carpet, as well as in pouring it into the bed-pan before using it, which completely destroyed all smell. I believe that this fluid not only was a great means of relieving the sufferings of the patients, but of preventing infection being communicated to the other inmates of the establishment.

It is remarkable that MM. Guersant and Brittonneau should have identified diphtheria with croup, and that Louis should have treated of it under the name of *croup chez l'adulte*, when the slightest observation proves that they are totally different diseases. It is of the utmost importance to attend to this in practice, otherwise it may lead to fatal results. This fact is strongly illustrated by M. Louis's own

reports, which, according to Dr. Green,\* record only one case in which a cure was effected by medical treatment; all his other cases proving fatal between eighteen and thirty-six hours after the voice indicated that the larynx was affected by membranous exudations. The erroneous opinion which is entertained by the French physicians is opposed by all our best authors. Dr. Abercrombie considered diphtheria as "an affection quite distinct from idiopathic inflammation of the membrane of the larynx and trachea to which we commonly apply the name of croup, which is a pure active inflammation, in which by early and decided treatment we have the fairest prospect of being able to arrest its progress."† In reference to this subject Dr. Tweedie,‡ in his excellent article on the diseases of the throat, states that "in true tracheitis or croup there is inflammation of the mucous membrane, followed by exudation of false membrane, but the disease is limited to the trachea, and does not extend to the throat;" while "in pellicular pharyngitis (angina membraneuse, or diphtheria) the inflammation commences in the pharynx, and that the constitutional symptoms and treatment of the two diseases are essentially dissimilar." "In croup the local symptoms denote inflammation of the trachea, and the symptomatic fever is inflammatory, requiring vigorous antiphlogistic treatment, whereas in diphtheria, though the accompanying symptoms denote acute disease, yet in many cases, and even during an epidemic, the tendency of the local inflammation is to assume a gangrenous character; the type of the accompanying fever is typhoid." "The only similarity between the two diseases is that in both there is the formation of a false membrane in the pharynx, and in some instances extending to the trachea; and in the other originating in, and in its progress being confined to, the trachea." If this is a correct statement, it is of great practical importance, particularly if we bear in mind, along with the history and symptoms of the disease, the admirable diagnosis of croup given by Dr. Cheyne, who is one of our highest authorities on that subject. He has clearly established that croup is limited in its attack to the period of life between the second month and puberty; and that it generally comes on suddenly, after the patient has gone to bed; when his sleep is disturbed by a harsh, ringing cough, as if the sound passed

\* 'Treatise on Diseases of the Air-passages.' By Horace Green, M.D., p. 240.

† Op. cit., p. 52.

‡ 'Cyclopædia of Practical Medicine,' vol. iv, p. 179.



through a brazen instrument. When he awakes, his voice is changed, and it has often the sound like the crowing of a cock; the breathing is very oppressed and sonorous, as if passing through a narrow tube. On examination, "*the fauces are scarcely if at all inflamed; and if they are discovered to be spotted, as it were aphthous, encrusted with a membrane, or apparently sloughy, the disease is not croup.*"\*

Diphtheria makes its appearance in a very different manner from what is here represented as characteristic of an attack of croup. It comes on gradually, and it is not limited to any age; and while croup is distinctly a sthenic ailment, diphtheria is met with in two very opposite states of the system, giving rise to the sthenic and asthenic forms of the disease. The local appearance and accompanying symptoms of each are very different, and well marked; although, in the commencement, they have a strong resemblance to common cynanche, or sore throat, for which they are liable to be mistaken by the inexperienced. We are, therefore, seldom consulted until the membranous exudation has taken place. It is rarely preceded by rigors, or they escape unnoticed, while the pain and difficulty in swallowing is greater than in common sore throat. This is another important feature of the disease, which tends still more to distinguish it from croup, in which Dr. Cheynet† states "the patients always swallow easily;" and "the natural functions are, sometimes, little disturbed." It is always attended with great debility, and occasionally with nausea and vomiting of bilious matter. The skin is hot, and the pulse in general rapid, varying, however, in force and fulness, according to the type of the disease, which also influences the complexion and the countenance, so that, in some instances it is swollen and flushed, in others pale, sunken, and cadaverous. There is intense thirst, but little appetite. The bowels are constipated, and generally much loaded. The urine scanty and high coloured, sometimes leaving a thick deposit on being kept. The tongue is generally covered by a thick brown or white fur; the breath is often very fetid. The throat is much inflamed, and, in some instances, the uvula and tonsils are greatly enlarged, and have a deep red, or purplish colour, and seem as if covered by a semi-transparent film. In other instances the fauces are relaxed, and have an erysipelatous appearance. As the disease advances, patches of a brown, yellowish, or gray-coloured exudation appear on different parts of the

\* 'Cyclopædia of Practical Medicine,' vol. i, p. 494.

† Op. cit., pp. 17—24.



fauces, often commencing on the velum pendulum palati. These gradually extend or coalesce, so that, in some instances, the whole lining membrane of the mouth and throat become covered, and the false membrane may extend from the posterior nares all over the pharynx, implicating the trachea. When the larynx becomes affected there is a short, dry, sibillous, or wheezing cough, which comes in paroxysms, and is accompanied with aphonia and sense of suffocation. In young children convulsions and asphyxia, when they occur, rapidly prove fatal. The saliva is scanty, thick, and viscid; or it may be profuse, serous, and bloody, with a fetid smell. The submaxillary and cervical glands sympathise with the tonsils, and become swollen and painful, giving much uneasiness when the patient attempts to move his head.

Diphtheria has been considered more or less dangerous according to the organs affected, and the extent of the false membrane; but the greatest apprehensions have always been entertained when the larynx and trachea have become implicated. The blood is, however, the true seat of the disease, and the most hopeless source of danger is when it forms fibrinous concretions in the heart, which has been shown by Dr. Barry\* to be a frequent cause of death, and is probably the one which occasions the sudden terminations of the disease when the patient is progressing towards convalescence. The disease is less fatal in adults, unless the constitution has been previously much impaired. The duration of the first stage of this disease is variable; in some instances it proves fatal in twenty-four hours after its attack, in others it lingers for twenty-one days, but it proves fatal most commonly between the third and seventh day.† In milder cases, a favorable termination may take place by spontaneous resolution; but this desirable result is more likely to occur under judicious treatment, in the course of which the inflammation of the throat and exudation gradually disappear, leaving in some cases a superficial ulceration or abrasion of the surface; in others, the parts have the appearance of being deprived of their epithelium.

Such are the symptoms and character of the first stage of diphtheria, but when it apparently terminates in convalescence, we must not be led to conclude that it is in every case eradicated from the system, as it too often happens, as has been already stated, that, like in syphilis, a second series of

\* Op. cit.

† Copland's 'Med. Dict.,' p. 1061.

phenomena may appear, differing, indeed, from those that preceded them, but not less alarming to the patient and his friends. Therefore we ought to urge on them the necessity of their continuing the remedies for some time after the preliminary symptoms in the throat have disappeared.

M. Maingault\* states that the paralytic and neuralgic affections, which occur in consequence of diphtheria, commence usually in the parts which were first the seat of the false membrane, and are transferred from them by a sort of metastasis to almost every other part of the muscular system. Hence many important organs occasionally become successively paralysed.

The following table, taken from M. Maingault's treatise, shows the comparative frequency of the occurrence of the neuralgic affections :

TABLE.

Paralysie des membres inferieurs . . . . .	13
„ Généralisée . . . . .	64
„ du voile du palais . . . . .	70
Troubles de la sensibilité sans affaiblissement musculaire . . . . .	8
Amourose . . . . .	39
Strabisme . . . . .	10
Paralysie des muscles du cou et du tronc . . . . .	9
Anaphrodisie . . . . .	8
Paralysie de la vessie . . . . .	4
„ du rectum . . . . .	6

By this table we see the remarkable preponderance the paralysis of the palate holds, in point of frequency, over all other neuralgic affections. It generally comes on between the second and third week after the preliminary affections of the throat have been subdued, and when convalescence seems established. It is indicated by a return of difficulty in deglutition, particularly in regard to liquids, which are liable to be ejected by the nostrils. This is more especially the case with wine and other stimulating fluids, while those of a bland character, taken in a small quantity at a time, may be swallowed with comparative ease. The voice becomes nasal, resembling that of a person with a cleft palate, and the patient has great difficulty in uttering long sentences, and

\* Op. cit., p. 1.

in attempting to do so his voice becomes weak, and at last inaudible. He is unable to use suction, or blow with his mouth, and he cannot gargle his throat.\* The defluxion from the throat is very annoying to the patient, and is got up with some difficulty. If the paralysis extends to the pharynx the difficulty in swallowing is much increased, and it is sometimes necessary to use a tube to convey nourishment into the stomach, thus increasing the distress of the patient, and the anxiety of his friends.

The neuralgic affections of the eye are also very distressing to the patient, and are of various kinds. In some instances the sight is so impaired that he can see only part of the letters in reading, and he requires an increased or diminished light in doing so. There may be strabismus, double vision, or the sight may be so much affected that the patient is entirely deprived of the power of reading, although he can see more distant objects. The eye becomes quite amaurotic in appearance, the pupil being enlarged and dark-coloured. M. Maingault asserts that, in many cases, this state of the eye indicates the transition of the paralysis from the velum pendulum palati. Like all the other forms of diphtheritic paralysis, this condition of the eye is entirely functional, as the ophthalmoscope discloses no organic change.

When the extremities are about to become the seat of paralysis they are often affected with a remarkable tingling sensation, as if they were asleep; and while the power of motion is gradually diminished, the sense of touch is much increased, so that friction becomes quite insupportable. As the paralysis increases in the legs the arms seem to regain their power. In some instances these symptoms are preceded by severe local pains resembling rheumatism, for which they may be mistaken. The appetite is capricious, although not always so much impaired as we should be led to expect. The bowels are sluggish, and are seldom moved without taking medicine. The urine is variable in quantity, and although sometimes thick and high-coloured, it seldom contains albumen. Many of the symptoms just described occurred in a patient I attended along with Professor Simpson. This patient was about fourteen years of age, naturally delicate, and of extremely nervous temperament. For some time his health seemed to be failing, which was ascribed to over study; at last he complained of his throat, which, on examination, was found affected with the diphtheritic inflammation. He suffered severely for several weeks, but, at last, recovered so

\* Maingault, p. 68.

far as to be considered in a state of convalescence. This, however, was of short duration, as he again became ill. It was at this period I first saw him. He was confined to bed, and complained of rheumatic pains in his limbs, and great debility. He was remarkably pale, his pulse 120, exceedingly feeble, and sometimes intermitting. He spoke like a person with cleft palate, had much difficulty in swallowing, and his food was occasionally rejected by the nostrils. His tongue was foul, and his throat inflamed, but there was no exudation on it. His appetite was good, but very capricious. His bowels were constipated and much loaded. His urine was variable in quantity, being sometimes profuse, at others scanty, and, although occasionally thick, it contained no albumen. A few days previously to my seeing him he could read the newspapers, but he gradually lost this power. He saw objects double, and at times had a decided squint. The pupils were dilated and dark-coloured, giving the appearance of amaurosis. He occasionally complained of headache, which seemed to proceed from the state of his bowels, and sometimes from acidity. He suffered much from the tingling sensation in his limbs, which were so sensitive that he could not bear them to be touched in the slightest way. He gradually lost the power of walking and standing, which seemed to proceed from paralysis in the muscles below the knee, which became much emaciated, while those of the thigh were comparatively plump. His temper was exceedingly irritable and uncertain. He had occasional sickness, and vomited a sort of bilious matter along with his food. He was restless in the early part of the night, but slept well in general towards morning. The affection of the eyes was comparatively of short duration, while the paralysis in the legs continued for many weeks; but at last it disappeared, and he became as strong and able to walk as ever he was.

It is obvious that diphtheria is a very obscure and complicated disease, in which the primary local symptoms in general give only an imperfect idea of the extent of the cachectic effect on the constitution. It is, indeed, questionable if the symptoms in the throat are not merely the indications of the deep-seated disease, which seems to be the result of some poison imbibed into the system and which undermines its energies with greater or less rapidity, according to circumstances. Some of the French authors have supposed that it arises from albuminuria, but further observation has not verified this supposition. The idea that the paralysis depends on cerebral disease is also erroneous, as the



brain has been found to be perfectly healthy. Maingault states\*—"La paralysie diphthérique généralisée est donc une affection sine materia, une paralysie sans alteration appreciable du systeme nerveux." So far as I have observed, diphtheria appears to partake in some instances, of the nature of erysipelas, in others of scarlatina. I have, therefore, been induced to adopt the treatment in it which I have found almost invariably successful in those diseases, varying its application according to the character of the case.

### TREATMENT.

Although diphtheria is obviously a zymotic disease, in which the whole system is more or less contaminated, our attention in the treatment should be directed first to the relief of the local symptoms, and to the removal of the false membrane, which usually appears on the throat, and apparently extends along the mucous passages by continuity of surface. Therefore, if Dr. Hasse is correct in his opinion, which seems also to have been entertained by Dr. Cheyne, that the plastic or exudatory inflammation "proceeds invariably from above downwards, and never in the opposite direction,"† we shall be enabled, in arresting its formation in the throat, to remove one of the most frequent causes of death, which is the extension of the false membrane to the larynx. Our next object should be to eradicate the poison from the system. In our endeavour to accomplish these ends we should have recourse to the mildest and most soothing remedies, avoiding what is likely to produce excessive local irritation or general depression of the natural powers; otherwise we shall in the one case run the risk of increasing the swelling of the throat, and an extension of the false membrane, which I have observed to be the case after the application of caustic; and in the other give such a shock to the constitution that it never rallies, while the patient rapidly sinks. It is remarkable, therefore, that Dr. Tweedie, in his excellent article on the diseases of the throat,‡ should have advocated "general blood-letting, followed by the application of leeches to neck under the jaw, or cupping on the back of the neck; counter-irritation; the bowels to be freely evacuated, after which to

\* Op. cit., p. 124.

† Dr. Green, op. cit., p. 237.

‡ 'Cyclopædia of Practical Medicine,' vol. iv, p. 179.



administer emetics, especially of the tartarized antimony." The French physicians recommend bringing the system rapidly under the influence of mercury, by giving "two grains of calomel every two hours;" at the same time mercurial frictions are to be applied to the neck, chest, and arms," a practice which was first employed by Dr. Conolly, of Cheltenham. When we consider the extremely weakening effect of these remedies, it is not surprising that the general results should have been most disastrous, although Dr. Abercrombie\* relates a case in which an infant of fourteen months "took in the first twenty-four hours twenty-four grains of calomel, combined with occasional opiates, and a diminished quantity for two days afterwards." Yet the child recovered, a fact which justifies a doubt of the whole quantity of calomel having been given, although that excellent physician was led to believe that it was so.

The local application I have found most efficacious is a lotion composed of one part of Condy's disinfectant fluid to eight of water, to be used several times a day by means of a camel-hair pencil, which enables the lotion to be applied more effectually to the parts affected, and with less fatigue to the patient than it could be done in the form of a gargle, which is quite inapplicable in young children and in particular stages of the disease. This lotion has the effect, not only of removing the false membrane, generally in the course of twenty-four hours, but it frees the breath from fetid odour, and improves the state of the saliva, which is liable to become profuse and disagreeable. I have used this lotion with uniform success both in diphtheria and in scarlatina, having been induced to try it in these diseases from observing its remarkable effects in cleansing foul ulcers in other parts, and giving them a disposition to heal; but in addition to the local purifying effects, I feel persuaded that this valuable fluid possesses powerful invigorating properties when taken internally; I have therefore long been in the habit of recommending a portion of the lotion to be swallowed at the time it was applied to the throat. When the throat becomes freed from the false membrane the lotion may be used less frequently; or one composed of the diluted sulphuric acid and the infusion of roses may be substituted; or when there is much relaxation of the uvula and fauces, the tincture of catechu may be used.

As an external application, when the throat and glands are painful and enlarged, I have found camphorated oil or the

\* Op. cit., p. 52.

anodyne liniment the most suitable. After gently applying either of these liniments the throat should be covered with medicated cotton wool. These applications are more soothing and efficacious than the stronger stimulants, and are not likely to be followed by the serious consequences of blisters, which are apt to run to gangrene.\*

In regard to the constitutional treatment, I order the following powder to be given every two hours until the tongue becomes clean, or the bowels freely moved :

℞ Submur. Hydrargyri,  
Pulv. Jacobi Veri, ana gr. j ;  
Sacchari albi, gr. xij.  
Divide in pulveres xij.

Although these powders are almost of homœopathic proportions, they not only clean the tongue, but act most certainly and mildly on the bowels, and can be used with advantage when stronger medicines are inapplicable.

If there is much sickness or nausea, small effervescing draughts of the bicarbonate of potash and tartaric acid will be most useful when the patient is old enough to take them.

When the tongue begins to clean, the mercurial powders are to be given more seldom, and stopped altogether if they purge too much. The bowels are then to be kept regular by means of powders containing the bicarbonate of potash, aromatic powder, and rhubarb, proportioned according to the age of the patient.

These powders are in general quite sufficient to regulate the bowels, and they have the additional advantage of overcoming, at the same time, the acidity and flatulency, which are often very annoying, and in some instances give rise to hiccough, which is liable to create alarm, from the impression that it is always a fatal symptom. If the bowels prove obstinate, and do not act with these powders, we may then have recourse to castor oil, or moderate doses of the fluid extract of senna.

From the commencement I am in the habit of giving the muriate tincture of iron, in doses suitable to the age of the patient, in water, every two or three hours, until the health is completely restored, or until it produces headache. In a child of a year old, three drops may be given every two hours ; and in an adult, five-and-twenty or thirty drops may be given. This valuable tincture not only overcomes the

\* Dr. Abercrombie, op. cit., p. 52.

first series of symptoms of the disease, by improving the condition of the blood and promoting the action of the kidneys, but it apparently prevents the occurrence of the secondary or paralytic symptoms. At all events, I have never seen them occur when it had been given sufficiently early in the disease. It also seems to be the most effectual remedy in removing the paralysis. From the commencement of the disease I order nourishing food, with wine, according to the age of the patient. In those of advanced life, two to four glasses a day may be given in divided doses every two hours, either by itself or with water. In addition to these remedies, the patient should be kept in a large and airy room, and as soon as possible be removed to the country.

## ERYSIPELAS.

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[*Read before the Medico-Chirurgical Society of Edinburgh, April 16th, 1851.*]

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IF I had had any doubts of the propriety of republishing the following observations on the treatment of erysipelas, they would have been entirely removed by reading Dr. A. E. Mackay's interesting paper\* on the contagiousness of the disease, in which he forcibly points out the danger arising from the admission to a ship's crew of any one whose idiosyncrasy renders him liable to an attack of erysipelas on being exposed to a comparatively trifling exciting cause. It is obvious that this circumstance might endanger a whole ship's crew, by such an individual becoming affected with erysipelas, and communicating it to the shipmates. This event is rendered more likely to occur in consequence of the fact referred to by Dr. Mackay, that there is "no condition in life in which men are so closely packed together, and in which isolation of the sick from the healthy is at best so imperfect, as on board a man-of-war."† Therefore, Dr. Mackay considers that no person having this unfortunate diathesis ought to be admitted as a sailor; and if it is ascertained after his admission, it should be a sufficient reason for his being discharged from the service. He supports this opinion by relating the fact, that on board the Marlborough, in 1862, when there was a crew of 1200, and although the ship was in a perfect state of cleanness, erysipelas broke out and created great anxiety among the medical officers. The disease made its first appearance on this occasion in one of the sailors who had the peculiar predisposition referred to, and it seemed to have been roused into action by an abscess in his leg. There was, at the same time, several cases of erythema and cynanche

\* 'Edinburgh Medical Journal,' No. civ.

† Op. cit., p. 709.

of a peculiar form, which is interesting, as showing the intimate connection between those diseases.

While Dr. Mackay clearly illustrates the danger of this disease occurring on board ship, even under the most favorable circumstances, he remarks that, "with regard to the treatment of erysipelas and erythema, I may state briefly that in those cases which we were unfortunately obliged to treat on board the sesquichloride of iron was freely used with the happiest effects. This remedy, indeed, has divested erysipelas of almost all its terrors."\* This very satisfactory statement fully justifies every endeavour to extend the knowledge of so important a remedy.

Mr. G. Hamilton Bell says "it will be generally admitted that practical observations on the treatment of diseases of daily occurrence are more valuable to the medical practitioner than the most interesting descriptions of anomalous cases, however extraordinary in their character or successful in their treatment. I am convinced, indeed, that the publication of the journals of well-employed medical men, giving in detail the treatment of every case occurring in their private practice, would prove most useful to the young practitioner, and be a valuable contribution to our medical literature.

In furtherance of such views, I am anxious to bring to the knowledge of my professional brethren a mode of treating erysipelas, differing from that usually resorted to, but which I have found invariably successful. I have no intention, however, of writing a treatise on a disease so well known, and on which so much has been recently published, because I think my object will be fully attained by reporting a few cases from my own journals, illustrative of my experience.

My purpose then being purely practical, it would be out of place to premise with a disquisition on the nature and causes of inflammation; but in order to explain in some measure the principle by which I have been actuated in employing a powerful tonic in a disease generally occasioning so much fever and cerebral excitement as erysipelas, I consider it necessary to repeat the opinion I have elsewhere expressed, viz., that "in inflammation, the capillary vessels having apparently lost the power of separating or electing the component parts of the blood which are necessary for functional purposes, and become to a certain extent inert tubes, a stream of blood is admitted, for the circulation

\* Op. cit., p. 709.



of which they are not calculated.”\* In other words, I consider that in erysipelas the capillary vessels are in an atonic state.

This hypothesis appears to me to be supported by the effect of the treatment I have adopted in erysipelas—the cases demonstrating that when an extensive portion of the surface of the body is violently inflamed, producing a high degree of fever and cerebral excitement, on the system being rapidly surcharged with, or brought under the influence of, the muriated tincture of iron, while the cerebral affection and other symptoms of fever subside, the local pain is relieved, and the redness and swelling gradually disappear; and, so far as the tonic medicine appears to be concerned, all this is effected without any appreciable evacuation from the emunctories of the system.

But refraining from theory or speculation, and in the hope that I shall lead to the general adoption of the practice I have suggested, and which I shall illustrate by a few cases, I shall proceed at once to state shortly the mode of treatment I have resorted to in every case of erysipelas I have attended for upwards of a quarter of a century, without having in a single instance failed of success. I have found that my remedy is not only effectual in removing erysipelas, but that it generally renders the patient more healthy and robust than before the attack of the disease; and in no instance in which I have had the charge from the commencement of the disease has suppuration taken place. I have for a series of years pressed privately on the attention of the senior members of the profession the value of this remedy in the treatment of this always troublesome and often fatal disease; and I have taught many of my junior brethren successfully to combat it. But my prolonged experience of the invariable success of my practice justifies me, I think, in thus bringing it to the notice of the profession generally, trusting that, in the hands of others, it may prove as great a blessing as it has in mine.

*Mode of administering the remedy.*—Of course the first object is to have the bowels freely acted on. If the erysipelas be mild, fifteen drops of the muriated tincture of iron are administered in water every two hours until the disease is completely removed. When the attack threatens to be more severe, the dose of the tincture is increased to twenty-five drops every two hours, and persevered in night and day, however high the fever and delirium. The only local applica-

\* ‘Treatise on Diseases of the Liver,’ p. 5.

tions I ever found necessary are hair powder and cotton wadding. While I depend for the removal of the disease on the chalybeate, it is necessary that the bowels should be attended to throughout the treatment.

## CASES.

I. 25th December, 1832.—Mrs. Naughton, a poor woman, about sixty years of age, of broken constitution, and having what is vulgarly called “shaking palsy”—a state of continuous chorea—had been suffering from erysipelas some days, and I was called to see her late at night. I found her head entirely covered with erysipelas; she was in a state of great exhaustion, and delirious. Ten drops of the muriated tincture of iron were ordered to be taken every two hours.

On the 26th she was calm and appeared easier; cont. tinct.

27th.—Quite collected, inflammation and swelling decreasing; cont. tinct.; to have a dose of oil.

28th.—Inflammation rapidly disappearing; nourishing diet; continue drops.

30th.—Recovering fast; *perge*.

2nd January.—Erysipelas gone, and the poor woman wonderfully well.

II. 20th May, 1835.—I was called to the Waterloo Hotel, at 1 o'clock p.m., to see R. R—, Esq., a stout gentleman, of full habit, about thirty years of age. I found him suffering from excruciating pain in the soles of the feet, which he ascribed to cold he had caught the previous day in coming from Glasgow. The pain was so acute that he could not bear the weight of the bed-clothes, nor his feet to be touched in the gentlest manner. Tongue loaded; pulse irregular, but not accelerated; skin of natural temperature, except on the feet. Eighteen leeches were applied, and he had six grains of calomel, followed in three hours by a dose of the compound powder of jalap.

*Vespere*.—Pain of the feet relieved, but there is excessive prostration of strength. Tongue still loaded; thirst; pulse irregular and unsatisfactory. The medicines had acted freely, and brought away a quantity of dark-coloured, offensive, scybalous matter. Slight erysipelatous blush on the right ankle. The following medicines to be given immediately:—Calomel, five grains; henbane, six grains; opium, one grain; James's powder, three grains; in the form of pills.

21st.—Slept well; pain of feet much diminished; right ankle swelled and red; complains of pain behind the knee; much thirst; skin natural; pulse 120, irregular; the evacuations from the bowels black, watery, and offensive. A table-spoonful of a mixture containing one part of the spirit of Mindererus and two of camphor mixture to be given every two hours. Hair powder and cotton wadding to be applied to the feet and ankles. 2 p.m.—No improvement; spots of erysipelas at the roots of the toes and over the instep, extending to the ankles. In consultation with Dr. Abercrombie, the following medicine was ordered:—Half a drachm of the compound powder of jalap and ten grains of rhubarb. The camphor and sp. Mindereri to be continued. 5 p.m.—No improvement; pulse 130. 8 p.m.—Dr. Abercrombie again saw him. Erysipelas rising on the leg; vesicles on the instep; tongue much loaded; stools black and unwholesome; prostration continuous. I explained to Dr. Abercrombie my mode of treating erysipelas, and obtained his assent to the exhibition of the muriated tincture of iron—twenty drops were ordered to be given every two hours. A colocynth pill to be taken at bed-time. Midnight.—Bowels freely moved; two doses of the tincture of iron had been taken; pulse 103, fuller, and more regular; skin hot. The colocynth pill not to be taken until the morning.

Continue tincture.

22nd, 8 a.m.—A sleepless night; suffering much from rheumatism in right arm; less pain in the soles of the feet; erysipelas not extending; pulse 100, full and soft; bowels not open; to have the colocynth pills. Noon.—With Dr. Abercrombie. Tongue cleaner; skin soft; erysipelas diminishing; rheumatism very severe in right arm. To continue the iron, and to have forty drops of colchicum wine three times a day. 7 p.m.—With Dr. Abercrombie. The symptoms more satisfactory; perspiring; *perge*. The improvement continued, and on the 25th the erysipelas had entirely disappeared. The rheumatism was more obstinate, but Mr. R— returned home in perfect health on the 6th June.

I have seldom seen more alarming exhaustion than appeared in this case for the first six-and-thirty hours after the attack.

III. 6th March, 1841.—Mrs. W—, æt. about 40, of full habit, complains of having a painful boil above the ear; there is also a patch of erysipelatous inflammation extending over the cheek; the ear much swollen. To have fifteen drops of the muriated tincture of iron every three hours; hair powder to be applied to the inflamed surface.

7th.—Boil better, but erysipelas extending all over the side of the face. To continue the steel drops.

8th.—Erysipelas subsiding. To have an aperient; cont. tinct.

12th.—Patient well.

IV. 7th July, 1843.—Mr. A. W—, æt. 16, a stout youth, of florid complexion, attacked with fever and headache. Ordered a dose of calomel and antimonial powder, to be followed by a black draught.

8th.—Erysipelas appeared over side of the face, with much fever; bowels free. To have ten drops of the muriated tincture of iron every two hours.

9th.—Less fever; erysipelas arrested.

Continue medicine.

10th.—Disease stationary. The tincture to be increased to twenty drops every two hours.

12th.—Considerable improvement.

15th.—Erysipelas gone.

V. 10th December, 1845.—R. S. W—, Esq., æt. 50, a delicate man, having had his constitutional strength injured by an accident in early life. I was called to the country to see him, and found him suffering a severe attack of erysipelas on the right side of the head; ear much swollen; pulse 100 and throbbing; great thirst; tongue furred; slight confusion of head; bowels open by medicine. Fifteen drops of the muriated tincture of iron to be taken every three hours.

11th.—Very ill; erysipelas extending; severe headache; troublesome dry cough. The chalybeate tincture to be continued; to have a cough mixture and effervescing draughts.

12th.—Less confusion of ideas in the morning, but erysipelas extending all over the face, which was much swollen.

*Vespere.*—Very restless. To have half a drachm of the solution of morphia in an ounce of camphor mixture at bedtime; the tincture continued.

13th.—Erysipelas extending, covering nearly the whole head and face. Had not taken the drops regularly; bowels free; the drops resumed.

14th.—No improvement; the head an inflamed mass, and much swollen; takes nothing but water; cough troublesome; mind wandering. To continue the tincture, and to have an aperient.

*Vespere.*—A diminution of the inflammation and swelling of the side of the head first affected.

16th.—No amendment; left side of the head tremendously swollen; very incoherent all day. I remained with my patient



during the night, and induced him to take the drops regularly.

17th.—A most satisfactory change; quite coherent; pain and swelling of face diminished, although quite a mask of dried exudation. To have an aperient, and continue the tincture.

18th.—Watched, and administered the drops during the night, and to-day there is a wonderful improvement in all his symptoms. To continue the medicine.

21st. Doing well.

1st January.—Has had no interruption to his convalescence, and feels in better health than before his illness.

There was, probably from the state of the patient's mind, much irregularity in the administering the steel drops until I personally watched the case, and on the 16th the disease had assumed a very alarming appearance; but immediately upon the medicine being regularly given, so as to bring the system thoroughly under its influence, a most satisfactory change was produced in the symptoms, the fever and delirium and pain subsided, calm sleep was induced, and the inflammation gradually disappeared.

VI. 16th January, 1850.—Miss C. M—, seized with pain, inflammation and swelling, extending over both cheeks and nose. Pulse 100; tongue loaded. A dose of calomel and James's powder ordered to be given at bed-time, to be followed in the morning by hourly doses of the solution of Epsom salts and tartar emetic, until the bowels shall be freely moved.

17th.—Face more swelled and inflamed; pulse 80; tongue cleaner. To have fifteen drops of the muriated tincture of iron every three hours; hair powder to be applied to the inflamed surface.

18th.—Face less painful. To continue the drops regularly, and to have an aperient.

19th.—Face entirely encrusted with exudation, having very much the appearance of the advanced stage of confluent smallpox; erysipelas not extending; no fever, tongue clean, but much annoyance from cough. To have a cough mixture, and continue the drops.

20th.—Improving.

21st.—Doing well.

22nd.—So much better as to be in the drawing-room. The disease happily left no sort of mark on a face of much beauty.

VII. 1st November, 1850.—W. C—, Esq., æt. 73, had been suffering from a severe catarrh and cough for some days.

Felt yesterday as if his shoe was too tight for the left foot, and on going to bed the ball of the great toe became agonisingly painful; no sleep nor ease in any posture. Ball of toe is much swelled and tender to the touch, having all the character of gout, but the inflammation is erysipelatous, extending over the front of the foot. Pulse 60, irregular; bowels open from medicine; tongue clean. Fifteen drops of the muriated tincture of iron to be taken every three hours.

*Vespere.*—Mr. C— declares that the drops acted like a charm, and at once relieved him from the pain. Redness and swelling continue. To have an aperient, and continue the drops.

2nd.—Scarcely any pain, although the inflammation is extending. A troublesome cough. The dose of the tincture be increased to twenty-five drops. To have paregoric for the cough.

3rd.—Inflammation spreading towards instep. To have an aperient pill, and morphia lozenges for the cough. Continue the drops.

4th.—Inflammation fading.

5th.—Improving.

8th.—Able to go out of doors.

I have in my journal several cases in which erysipelas was combined with gout. Two of these occurred in gouty subjects, and in both the health was restored by the chalybeate, as in the above case of Mr. C—. This gentleman had, two years ago, an attack of erysipelas in his thigh, and was cured by the steel drops. He never had gout before, but I understand his father had suffered from it.

With regard to the diet of the patient under erysipelas, unless when there is much fever, I always recommend it to be generous, and of easy digestion. In a case at present convalescent, in which the attack was very similar to Mr. C—'s, only that when the great toe and foot was violently inflamed the knee of the other leg was also violently affected, from the habits of the patient—a constitution broken from intemperance—I was obliged to allow, along with the drops, nearly a bottle of port a day. In this case the podagral erysipelas has disappeared, and my patient is in better health than he has had for many months.

## ADDITIONAL REMARKS, WITH CASES.

By C. BELL, M.D.

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My attention having been early attracted by the success of my brother's treatment of erysipelas by the muriated tincture of iron, I now, after many years' experience of its use, unhesitatingly express my opinion in its favour. I have prescribed it, both in the idiopathic form of the disease and in that consequent on external injury, with the most satisfactory results; and I have found it equally efficacious at every period of life, from early infancy to advanced age. It not only removes erysipelas in a remarkably short time without weakening the patient, but it effects such an improvement in the system that those who have been subject to periodical attacks of the disease are rendered much less liable to have a return.

The beneficial effects of this medicine are so immediate and invariable in the common forms of erysipelas, that I feel convinced, were it given with boldness and perseverance in puerperal fever, which is now generally admitted to be analogous in its nature, and frequently accompanied by erysipelalous inflammation on the surface of the body, many valuable lives might be preserved.

In pursuing the chalybeate treatment of erysipelas, I consider it of much importance to bring the system rapidly under its influence, in order to effect a speedy removal of the disease. I have, therefore, been in the habit recently of giving much larger doses of the tincture than I ventured to prescribe at first. It is a remarkable circumstance in the exhibition of this valuable remedy in erysipelalous diatheses, that although given in much larger and more frequently repeated doses than have been recommended in our dispensa-

tories, it never produces headache, and when this symptom is present it quickly relieves it, while at the same time it reduces and regulates the pulse; thus showing that, in this state of the system, it has a soothing and sedative as well as alterative effect.

The foregoing cases prove so clearly the remarkable influence which this medicine has in overcoming the idiopathic form of erysipelas in the adult, that I think it almost unnecessary to increase the length of this paper by producing additional evidence on the subject, although I have had many cases illustrating the fact in my own practice. I am more anxious to direct attention to the advantages to be derived from this mode of treatment in infantile erysipelas, in which the field for curative measures is so very limited; and also to its effects in that form of the disease consequent on external injury, in which the best treatment has hitherto been too often unavailing, especially in our hospitals, and after operations. With this view, I shall now briefly relate a few cases illustrative of the treatment in each of these forms of erysipelas.

On the 27th of March, 1849, I was requested to see a baby of a few weeks old, who was suffering from a severe attack of erysipelas, extending from the wrist to the elbow. I ordered a dose of castor oil immediately, and two drops of the muriated tincture of iron, to be given every two hours in a teaspoonful of water, with a little sugar. In three days the erysipelas had entirely disappeared, and the infant seemed lively and in good health.

Another baby, an extremely emaciated infant, born on the 24th January, 1850, was seized a few days after birth with erysipelas, which occupied the vulva and nates, and was accompanied by severe catarrh and cough. There were much fulness and tension of the lower part of the abdomen, the urine was retained, and the bladder could be felt like a small orange immediately above the pubis. Being naturally weak, it soon became so excessively feeble that no hopes were entertained of its life being preserved, and it was deemed advisable to have it christened without delay.

Small doses of calomel and James's powder were given at short intervals, along with a cough mixture composed of ipecacuan wine, carbonate of soda, water, and syrup. Very little benefit seemed to arise from this treatment; I therefore stopped the calomel and antimony, and ordered two drops of the muriated tincture of iron to be given every two hours in a little sugar and water. The infant had become so



exhausted that I was obliged for some time to order, in addition to the tincture, a drop of brandy to be given every half hour.

Under this treatment, the erysipelas and dysuria rapidly disappeared, and the infant slowly gained strength, and became a lively and healthy child.

A third case occurred in a fine healthy looking infant, born on the 27th September, 1850, with six fingers on each hand. A few days after birth, erysipelas appeared on the vulva and nates, accompanied with a disordered state of the bowels and frequent green evacuations. Having endeavoured for some time to correct this state of the bowels with small doses of gray powder, rhubarb, and the carbonate of soda, and occasional doses of castor oil, without effect, I ordered two drops of the tincture of the muriate of iron to be given every two hours in a little water and sugar. For some time little progress was made in removing the erysipelas. One day it seemed to subside, and on the subsequent day it was as bad as ever. I was induced to believe that the medicine was not given regularly, and that some days it was not given at all. There was reason also to suspect that the nurse's milk was bad, as I was informed that her own child had been affected in the same manner. I recommended that another nurse should be got, and insisted on the muriated tincture being given regularly. The result was that the erysipelas was removed, and the child's health so much improved that Mr. Syme was enabled, within ten weeks after its birth, to remove the supernumerary fingers with success.

I shall now give a few cases of sympathetic erysipelas, or that consequent on external injury.—Mrs. D—, of broken constitution, received an injury on her nose, which slightly abraded the skin. Erysipelas of the upper part of the face soon followed. She was put on the muriated tincture of iron, and in three days the disease was entirely removed.

September 3rd, 1850.—I was requested to see a railway guard, who was said to have met with a serious accident. I found him suffering under phlegmonous erysipelas, extending from the ankle to the knee, the consequence of a slight bruise he received on his shin about a fortnight previously, and which he had neglected. The usual treatment was adopted, viz., evaporating lotions, poultices, and incisions, along with internal medicines, such as calomel and antimony, with saline draughts; but with no improvement in the leg, there being much swelling and inflammation, and the wounds having a dry and unhealthy look. For

some days I had great fears that the patient would sink under the disease, and my apprehensions of his ultimate recovery were much increased when erysipelatous inflammation appeared above the knee and extended to the hip, occupying the whole of the posterior part of the thigh. There was a considerable degree of fever, pulse 110, flushed face, headache, and severe cough.

Twenty-five drops of the tincture of the muriate of iron were ordered to be given in water every two hours, along with a diaphoretic mixture, containing the solution of the acetate of ammonia and antimonial wine. The bowels were kept open by saline medicines.

The headache and fever soon subsided, and the erysipelas disappeared from the thigh. The leg healed slowly, in consequence of the extensive sloughs which formed round the incisions, and the luxuriant granulations which afterwards formed requiring the frequent application of escharotics. The man ultimately made a good recovery, and returned to his duty in better health than he had enjoyed for a length of time before his accident. I have no doubt, had the chalybeate tincture been given at an earlier period in this case, the disease would have been checked in its commencement, and no sloughing would have taken place. I am the more convinced of this from the result of the following case.

On the 4th December, 1850, I was called a few miles into the country to see Mr. T—'s son, aged about four years. He had always been paralytic in his right leg, in consequence of an accident it was supposed he had met with when an infant. For some time previous to my seeing him he had suffered from a painful swelling on the right side of the anus, which suppurated, and was opened by the family surgeon, and a large quantity of pus discharged; but the abscess showed no tendency to heal. While playing on the carpet, he slightly bruised the skin of his left leg under the knee, which was immediately followed by erysipelas, extending from the knee to the ankle, and accompanied by high fever and rapid pulse.

Small doses of calomel and antimonial powder were ordered to be given every three hours during the day, and a dose of the essence of senna in the morning. In addition to these medicines, to have three drops of the muriated tincture of iron every two hours in thin syrup. The leg was dressed with flour and cotton wadding.

5th.—The erysipelas more generally diffused over the leg. To stop the calomel and antimony, but continue the chalybeate tincture, and keep the bowels open with the senna.

8th.—The erysipelas quite gone, and the original wound under the knee healed. No fever, tongue clean, and the little patient more cheerful than he had been for a length of time.

In conclusion, I shall shortly refer to a few cases of idiopathic erysipelas in which I was consulted. The first case occurred in a gentleman nearly eighty years of age, who had long been subject to periodical attacks of erysipelas in his legs. I recommended him to take the muriated tincture of iron, which removed the attack he was then suffering from, and he remained longer free from the disease than he had done for a number of years. He lived until he was eighty-six years of age.

The second case was that of a gentleman of high talents and acquirements, rector of an academy in the south of Scotland. He had an alarming attack of erysipelas, and was attended by two intelligent medical men, who had adopted all the usual remedies with very little advantage. They therefore considered his case hopeless. The erysipelas was extensively diffused over his head and shoulders; there was much incoherence and great debility. Immediately on his system being brought under the influence of the muriated tincture of iron the disease subsided, and he was gradually restored to health.

On the 26th June, 1849, I was requested to see Mr. M—, a railway clerk, aged forty, but he looked ten years older, of full habit of body, who was suffering from erysipelas affecting the left side of his forehead, and covering his face, which was much swollen; eye bloodshot and suffused; slight headache; tongue much furred; pulse 96, soft and weak; had taken a dose of senna and salts without effect.

℞ Submur. Hydrargyri, gr. v;

Pul. Antimonialis, gr. iij.

M. ft. pulvis. Sum. hor. som.

To take twenty-five drops of the muriated tincture of iron in a wine-glassful of water every two hours, and to repeat the saline mixture in the morning if the bowels are not moved.

27th.—No headache; swelling of face much diminished; eye less inflamed; bowels moved twice. To continue the chalybeate, and to take the saline mixtures in the morning.

28th.—Going on satisfactorily.

30th.—Able to return to his employment.

On the 15th December, 1852, I was requested to see Miss C—, aged twenty-two, a remarkably stout person, who had been paralysed in both legs below the knee from her birth. She thinks she caught cold on the 12th instant, in going to church, as she has suffered from sickness ever since. Erysipelas appeared last night, and extends over the whole of the right hip; pulse 120; tongue covered with a thick brown fur; bowels are relaxed, from having taken a dose of salts; she vomits a quantity of bilious matter whenever she takes any nourishment. To take thirty drops of the muriated tincture of iron every two hours in a wine-glassful of water, and at bed-time to take four grains of calomel in the form of pills.

℞ Pul. Rhei, gr. x;  
 Pul. Aromatici, gr. v;  
 Bicarbon. Potassæ, g. xv.

M. ft. pul. Mete vj tales.

*Sig.* One to be taken in the morning in water, and, if necessary, another in three hours after.

16th.—Less redness of right hip, but the left is covered with a dark-red rash, interspersed with numerous yellow blisters; vomiting still troublesome, but less frequent; bowels moved, but she ejected the powder; pulse less frequent, and she has no uneasiness.

17th.—Her monthly period has come on; vomiting more troublesome; redness less on the one hip, but increased on the other. To take potash effervescing draughts occasionally. In the evening the vomiting much less frequent. To have an alterative pill; and to continue the tincture of iron.

18th.—Expresses no uneasiness, but can retain nothing except the tincture; pulse 120, and there was less redness; had a great desire to have a salt herring, but when she got it could eat only little of it. To have a little sherry and water, and to continue the chalybeate and effervescing powders.

19th.—The catamenia have disappeared, and she seemed going on satisfactorily in the morning; towards evening, however, the fever increased; pulse 132; countenance very cadaverous, and the right leg was erysipelatous from the knee to the ankle, and there were numerous large serous blisters on different places; there was no headache, but there was considerable intolerance of light and sound; there was frequent vomiting and purging of pure bilious matter. To continue the chalybeate and effervescing powders, and to apply hair powder to the limb.



20th.—Much less fever; pulse 72. The redness diminished both on the nates and legs, except near the ankle, which had a very dark colour, especially round the blister. To continue.

21st.—An increase of fever; pulse 133, and more inflammation of the leg. Vomiting still troublesome, and bowels relaxed, and the evacuations were much in colour of the chalybeate, as if the medicine passed from the bowels without being absorbed into the system. To have an alterative pill, and continue the other medicine.

22nd.—Symptoms much the same generally, with considerable increase of redness and swelling of the leg, especially at the knee. Tongue beginning to clear at the edges. To continue.

23rd.—Tongue clean; pulse 72 in the morning, and the right leg less swollen and red, but there was a slight blush on the left leg at the ankle. Vomiting still continues, although less frequently, and bowels less relaxed. To interrupt the chalybeate, and to take ten grains of calomel. In the evening there was less irritability of stomach, but the pulse had risen to 144, and there was more œdema of both legs, and redness of the left ankle increased. Bowels moved twice. To renew the chalybeate.

24th.—The symptoms much the same as last night; pulse still 144. The œdema of right leg so much increased that there was quite the sensation of fluctuation, and I feared that pus had formed. I therefore requested a consultation with Mr. Syme, who considered the swelling was merely œdematous, but he feared that there was effusion into the chest; there was, however, very little cough, and no oppression of breathing. Less redness of the leg. To have a mixture containing the spirit of Mindererus, and return to the use of the chalybeate. In the evening the redness and swelling rather less, but pulse still 144. Tongue more furred. Had some inclination for food, and took some nourishment.

25th.—Much less swelling and redness of right leg; pulse 108; bowels regular. Tongue clear in the morning. To continue the chalybeate; to have a little wine. In the evening looking better, and felt more comfortable. Her cough much less.

26th.—Looking much better, the cadaverous expression of countenance having entirely gone. Both legs less painful and swollen; redness disappearing; pulse 108. No sickness, or any kind of uneasiness. Took some fish for breakfast.

This lady soon recovered her usual health, notwithstanding the long-continued irritability of stomach and amount of

bilious vomiting, which seemed to resist everything until she took the ten grains of calomel. Some years after, this lady had an exactly similar attack, but it was much less tedious. The same treatment was adopted with success.

With regard to the local treatment in erysipelas, I have long been in the habit of using violet powder and medicated wool; but now I find a tepid lotion containing one part of Condyl's fluid to eight of water exceedingly soothing, while it completely destroys all smell when there is any discharge from the surface of the skin. After sponging the parts with this lotion the medicated cotton wool ought to be applied.

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